

REMARKS

Claim 1, 3-6 and 8-17 are pending in the application, are rejected and are at issue.

Applicant notes the objection to the drawings. Filed herewith is a replacement sheet adding a Fig. 8f. Likewise, amendments to the specification are made herein. Particularly, the specification is amended to describe the cross section illustrated in Fig. 8b as being a polygonal cross section and Fig. 8c as illustrating an octagonal cross section. It should be noted that the cross section illustrates the overall shape of the device such as by connecting the outer edges of the thread elements and ignoring the grooves which interrupt the screw thread. Added Fig. 8f shows the hexagonal cross section. As all of these features were discussed in the specification as originally filed, no new matter has been added.

With respect to the limitations in the groove becoming larger, this has been corrected in claim 5 to specify that the groove become smaller. It is noted that the depth of the groove is determined by the height of the screw thread. As the screw thread is higher at the cervical side, the groove is correspondingly larger. As the thread has a lower profile toward the apical end, the groove is likewise smaller.

Applicant traverses the rejection of claims 1, 3, 8-10, 12 and 14 as anticipated by Munch U.S. Patent No. 4,468,200.

Independent claim 1 specifies, in pertinent part, an intra-osseous implant for placement in bone of a human ear or animal body comprising a part having an apical side and a cervical side. The part is provided on its circumferential surface with an interrupted screw thread.

Multiple interrupted screw thread parts serve as retention elements allowing the placement of the implant in the longitudinal direction into the bone tissue but preventing the removal of the implant in the opposite longitudinal direction out of the bone. The retention elements are provided with a profile exhibiting a shallow slope toward the apical side in a steep slope on the cervical side.

An anticipation rejection requires that a single prior art reference disclose each and every element of the claim, arranged as in the claim. Munch does not anticipate any of the claims. Particularly, Munch does not disclose or suggest retention elements allowing placement of an implant in a longitudinal direction into the bone tissue but preventing the removal of the implant in the opposite longitudinal direction out of the bone.

The action focuses on the basic claim limitation to a screw thread running in the direction of and ending at the apical end and having multiple grooves which interrupt the screw thread. The action does not correctly address that the claimed multiple interrupted screw thread parts serve as retention elements. The retention elements allow the placement of the implant in a longitudinal direction but prevent the removal of the implant in the opposite longitudinal direction out of the bone. Munch does not disclose or suggest such retention elements.

It is clearly evident that Munch in Figs. 1 and 2 discloses that most of the intra-osseous part of the implant is covered with a screw thread. A groove 15 functions as a discharge channel. However, the grooves are rather small and are insufficient to establish interrupted screw thread parts which serve as retention elements, as set forth in claim 1.

Claim 1 specifies that the implant can be placed in the bone essentially by a pushing action, or in the wordings of the invention "for the placement of the implant in longitudinal

direction". If such a pushing action were used with Munch, the implant would cause substantial friction with the bone tissue because of the large portion of the screw thread on the surface of the implant. It is therefore more likely that the bone tissue will be damaged during pushing or hammering of the implant that is disclosed in Munch.

In order to prevent damage and unstable placement when implanting the Munch device, the bore or prepared hole in the bone tissue should at least be almost the size of the profile of the screw thread instead of the implant itself. This however results in an unstable implant placement because of the small contact surface of the implant with the bore/prepared hole in the bone tissue. It is therefore inferred that the implant disclosed in Munch is to be screwed in instead of pushed in. Indeed, the disclosure in Munch discusses only a threading action.

Claim 1 of the present application states that "the multiple interrupted screw thread parts serve as retention elements allowing the placement of the implant in longitudinal direction". The screw thread of Munch does not make it possible to insert the implant in this manner, namely pushing the implant in the longitudinal direction. Independent claim 1 is therefore non-anticipated by Munch.

The Action states that Munch discloses "multiple interrupted screw thread parts serving as retention elements capable of allowing the placement of the implant in a longitudinal direction". However, there is no discussion as how there is any such capability. As is readily apparent, such a pushing action with Munch would damage bone tissue.

The screw thread parts of the present invention are relatively small compared with the groove/ intra-osseous part of the implant surface and therefore have a different effect. This

corresponds to the characterization of the screw thread parts as retention elements as discussed above. The relative small surface results in relatively small friction upon pushing the implant into the bone tissue. The screw thread parts are shaped as a shark teeth and dig into the surrounding bone tissue. The implant is therefore stable and anchored directly upon placement.

The implant disclosed in Munch gains stability and becomes anchored with the bone tissue when new regenerated tissue is grown over the annular notches, as discussed at column 3, lines 43-44. The screw thread parts of the Munch implant can therefore not be seen as "retention elements allowing the placement of the implant in longitudinal direction into the bone tissue" as set forth in claim 1 herein.

The shape of the Munch implants are like a conical helix, see column 2, lines 8-9. With the cylindrical bore in the bone tissue the shape of the Munch implant will result only in a small portion of the implant to be in close contact with the bone tissue. This results in a less stable and less anchored implant. If the bore in a tissue is the same conical shape of the implant the implant is restricted in depth replacement. There is no freedom to adjust the implant to give it to the correct height/depth without losing stability.

Applicant submits that in view of the above claim 1 is not anticipated by Munch. Therefore, dependent claims 3, 8-10, 12 and 14 are not anticipated and withdrawal of the rejection is requested.

Applicant traversed the rejection of claims 4, 5, and 15 as obvious over Munch and further in view of Alvaro U.S. Patent No. 6,099,312. Claims 4, 5, and 15 depend from independent claim 1. The deficiencies with respect to Munch are disclosed above. Alvaro does

not disclose these deficiencies. Therefore, no combination of the references results in the claimed invention and the rejection should be withdrawn.

Applicant traversed the rejection of claim 6 as obvious over Munch in view of Misch et al. U.S. Patent No. 5,954,504. Claim 6 depends on claim 1. The deficiencies with respect to Munch are noted above. Misch does not disclose these deficiencies. Therefore, no combination of the references results in the claimed invention and the rejection should be withdrawn.

Applicant traverses the rejection of claims 11, 16 and 17 as obvious over Munch in view of Kanomi et al. U.S. Patent No. 5,921,774. Claims 11, 16 and 17 depend from claim 1. The deficiencies with respect to Munch are noted above. Kanomi does not disclose these deficiencies. Therefore, no combination of the references results in the claimed invention and the rejection should be withdrawn.

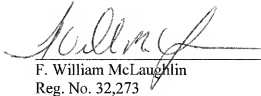
Applicant traversed the rejection of claim 13 as obvious over Munch in view of Lonca U.S. Patent No. 4,722,688. Claim 13 depends on claim 1. The deficiencies with respect to Munch are noted above. Lonca does not disclose these deficiencies. Therefore, no combination of the references results in the claimed invention. The rejection should be withdrawn.

Summarizing, the principal reference, Munch, does not disclose or suggest retention elements allowing placement of an implant in a longitudinal direction in the bone tissue. Therefore, none of the claims are anticipated or obvious over Munch.

Reconsideration of the application and allowance and passage to issue are requested.

Respectfully submitted,

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